AMERICAN

EDUCATIONAL MONTHLY.

NOVEMBER, 1872.

*THE INJURIOUS INFLUENCES OF THE SCHOOLS.**

PREFACE.

THE influences at work in public schools upon the health of the scholars, have been of late years in Germany the subject of much inquiry and discussion. The following report was made, in 1869, by the renowned pathologist, Dr. Rudolf Virchow, of Berlin, at the instance of the Prussian Minister of Public Education, who requested that gentleman to examine into and report the injurious influences at work upon the health of the young in the public schools of Germany. Although, according to the nature of the inquiry, no new facts could be brought to light, Dr. Virchow made conscientious and judicious use of the experiences of his predecessors in the same field, and his conclusions are in every case, where it was possible, based upon statistical data. The present report is, therefore, of great value for precise and convincing treatment of the subject. The concluding remarks therein, urging the formation of a Government Sanitary Commission for the public schools, are worthy of earnest attention by our own school authorities. The *Talmud* says: The breath—consequently the health—

* A Report, by Dr. Virchow. Translated by J. P. Jackson. Preface by tranalator.

of the school children upholds the world! And not only must pure air be introduced into our school rooms, but many evils already there, removed.

Dr. Virchow hardly needs a word of introduction to the American public, and none at all to medical men. A few biographical details, will, nevertheless, be interesting. Rudolf Virchow was born on the 13th of October, 1821, at Ichivelbein, Pomerania; he received his education at the Coslin Gymnasium, studied medicine at the Medical and Surgical Friedrich-Wilhelm's Institute in Berlin, and graduated in medicine there in 1843. He rapidly gained position among his fellow physicians, and was made prosector at the Charité, where he had excellent opportunities for pathological studies, which he used with his friend Reinhardt. The results of their labors were published by both in the *Archiv für Pathologische Anatomie und Physiologie*, established by them, and carried on alone by Virchow after Reinhardt's death in 1852. Virchow has ever been one of the foremost in Germany in the conflict for medical reform. He was sent in 1848 by the Prussian government to Silesia, to report on the typhus fever prevailing there, and gave his observations in "The Typhus in Upper Silesia" (Berlin, 1848.) In 1847 he fitted himself for a professorship in the University of Berlin, but was removed by the ministry in 1849, because of his democratic principles. In August, of the same year, he accepted a call to the chair of Pathological Anatomy in the University of Wurzburg, and was soon one of the most prominent members of the so-called Wurzburg school. His lectures at that University were so widely popular, particularly on cellular pathology, that he was recalled to Berlin in 1856, where he reöccupied the chair of Pathological Anatomy, and rendered it the most famous of its kind in Europe. The fame now attached to the medical faculty of that institution is in a great part due to him. We omit details of Virchow's political life. He is now a member of the Prussian House of Deputies, and is numbered with the founders and leaders of the so-called "Party of Progress."

Professor Virchow is the founder of the so-called theory of cellular pathology, which gives prominence to the vital action of cells in the healthy and diseased functions of the

body, which theory he first developed in his "Lectures on Cellular Pathology," (Berlin, 1859.) This work was translated into nearly all the languages of Europe, and the third edition formed at the same time the first volume of his "Lectures on Pathology," (Berlin, 1862.) During our late war the government had especial editions of this work published, and distributed among the military physicians. The second, third, and fourth volumes of the latter work (1863–67,) include the lectures on "Diseased Tumors." Among his other works, are "The Famine in Spessart" (Wurzburg, 1852;) "Collected Treatises on Scientific Medicine," (Frankfort-on-the-Main, 1856;) with the coöperation of various German medical men, "Handbook of Special Pathology and Therapy," (Erlangen, 1854;) "Researches on the development of the skull," (Berlin, 1857:) "Four Addresses on Life and Disease," (Berlin, 1862;) "Trichiniasis," (Berlin, 1865;) "On the Hunger Typhus," (Berlin, 1868.) With Dr. Holtzendorff, Dr. Virchow is now publishing, in the German language, a very valuable collection of "Popular Scientific Lectures," in which he has printed many interesting essays and lectures. Virchow takes an important part in all efforts for the public good; he has for years lectured in the Berlin Mechanics' Union of Berlin, and is president of the Union for Family and Popular Education. The following essay on "Certain Influences of the Schools injurious to Health," first appeared in Virchow's *Archiv für Pathologische Anatomie und Physiologie und für Klinische Medicin.* Our object in translating it will have been accomplished if, as Dr. Virchow remarks, it contributes toward calling the attention of other and larger circles beside scientific men to the subject here touched upon, and incites to new observations and suggestions, having in view the better construction of the schoolrooms, and the obviation of all influences injurious to the young, and consequently to the rising generation.

INTRODUCTION TO THE REPORT.

The attention of physicians and educators has been repeatedly called, since the commencement of the present century, to the injurious influences at work in the schools, upon the health of the young, first in one direction and then in

another, though, as a rule, they have never been subjected to a thorough and scientific examination. Even the essay of Lorinser (in the *Preuss. Med. Vereinszeitung*, 1836,) which caused so much excitement at the time of publication, treats of the constantly increasing shortsightedness, diseases of the abdomen, pulmonary consumption, and other diseases among the youth of the higher schools, as something already well-known; and his opponents, Ebermaier, for example, uttered just as indefinite assertions to the contrary, though without producing anything like a similar impression. Certain general experiences, certain notorious, and, therefore, accepted dogmas, passed into the books, or gradually won their way into the common language of the educated, yet when people were asked for reasons or external proofs, the answer was, in most cases, perfectly insufficient.

The attempts to win real facts as cases upon which to give judgment by means of well ordered examinations are very isolated; and it must be acknowledged as an exceedingly great progression, that, in single directions, the beginning has indeed been made, to win statistics of that which we may call the *school-evil*, and the diseases *of the school*. It is only possible by means of extended, scientifically sure, comparative statistics to say with certainty what evils or diseases are produced by the schools, and what is to be done for their prevention. When this statistical basis is wanting, we have indeed always certain scientific axioms of general worth, which can be applied to the schools as well as to other institutions of society; but it cannot be denied that in their application many very important considerations may be overlooked or falsely estimated. In the following report these two groups will be kept strictly apart, and those evils which are proved by fact will be carefully separated from those merely assumed.

DISEASES OF THE EYE, ESPECIALLY SHORTSIGHTEDNESS.

The first attempts to prove by the statistical method the earlier estimated influences of the schools upon the development of shortsightedness, were made in the commencement of the present century, by Ware, of England, though they were insufficient, and in no way methodical. Since then,

similar inquiries have been undertaken in various countries of the Continent, especially in Germany, in part officially, and in part by private persons; though hardly any are consistently and systematically organized. The researches of Dr. Hermann Cohn, of Breslau, were the first to take on a form corresponding to the present state of science, not only as regards the number of persons included in the examinations, but also the method and carefulness of the observations; and they can, therefore, be looked upon as extremely important, indeed, in a certain sense, as determinative.

Dr. Cohn bases his deductions upon the results of the examinations of the scholars of five village schools at Langenbielau, as well as of twenty elementary schools, two higher girls' schools, two intermediate schools, two technical schools *(Real Schulen)* and two gymnasia in Breslau. Of 10,060 scholars, Cohn made the preliminary examinations himself of 6,059; while the rest were subjected, by the teachers, to a test prescribed by him. He subsequently examined minutely the condition of the eyes of 410 Breslau University students. In all of these, the age, the number of years spent in the school, the arrangement of the schoolrooms, were recorded; the relation of the diseases of the eyes to these various agencies taken into account; and the materials thus won furnished, in its details, a secure basis for a scientific test such as can scarcely be equalled in any other quarter.

Taken as a whole, the result was gained that among these 10,060 scholars, seventeen per cent. were not normal-sighted, though the latter percentage is very dissimilar in the various schools, as the following figures will show:—

In the Village Schools	5.2	per cent.
" City Elementary Schools	14.7	"
" Intermediate Schools	19.2	"
" Higher, Girls'	21.9	"
" Technical (Real)	24.1	"
" Gymnasia	31.7	"

Among the 410 Breslau students there were found sixty-eight per cent. not normal sighted (ametropic).

Leaving now out of the question hyperopy, astigmatism, and the real diseases of the eye, as of less importance here,

and treating only of shortsightedness proper (myopia), we come to the deplorable result, that, on the whole, there were nearly ten per cent. of shortsighted among the children, as follows :—

Village Schools	1.4 per cent.	
City Elementary Schools	6.7 "	
Higher Girls' Schools	7.7 "	City Schools 11.4 per cent.
Intermediate Schools	10.3 "	
Technical	19.7 "	
Gymnasia	26.2 "	
Students	60.0 "	

If a regular increase as we ascend into the higher schools is shown, this phenomenon becomes all the more apparent when the separate classes of each school are considered. It may here suffice to introduce the classes of the city elementary schools and the gymnasia :—

	VI	V	IV	III	II	I
Elementary Schools,			2.9	4.1	9.8	9.8
Gymnasia	12.5	18.5	23.7	31.0	41.3	55.8

The lamentable judgment here expressed by Dr. Cohn, can, unfortunately, not be confuted ; all the less because he proves by comparative tabular demonstration, that, not only is there an increase in the number of the shortsighted, from class to class, but that also the intensity of shortsightedness increases in the same ratio. The girls' schools and intermediate schools alone make in this respect an exception. Myopia, in these schools, is, therefore, on the whole, progressive ; it takes on, by and by, that dangerous course which eventually leads to shortsightedness proper.

Dr. Cohn is, on the other hand, very careful to guard against the opinion being ascribed to him, that the enormous spread of myopia among school children is to be exclusively attributed to the schools. It is evident that there are, besides the school, many other unfavorable agencies at work, even in the parental house. In order to gain reliable material for an opinion here, however, it would be necessary to make examinations among other categories of the population ; for instance, among the apprentices and journeymen of parallel age. Such comparative surveys are, as yet, totally wanting. Nevertheless, it can be said with certainty,

that the class of apprentices and journeymen of the age of the scholars of the first class of the gymnasia does not contain an average of from fifty-five to fifty-six per cent. of shortsighted, and that the class corresponding to the age of the students does not contain sixty per cent.! And though it be admitted that bad lights, small print, improper posture when seated, etc., have a very injurious effect, even in labors at home, it must be conceded that many of these habits are transferred first of all from the school to the house, or at least that the schools do not sufficiently guard against the cropping out of bad habits in this respect, that they, indeed, tend to promote individual ones.

Besides the question of light and the lighting (illumination) of school-rooms, Dr. Cohn has subjected the immovable desks and benches, at present in use in the German schools, to a thorough investigation, and considers himself justified in designating them as positively injurious in their present arrangement, since they compel the scholar to observe his writing or book in close proximity, and with the head bowed down over the desk. This necessitates, on the one hand, a greater activity of the muscle of accommodation in the eye, and this again causes an increase of the hydrotastic pressure in the back part of the pupil and an elongation of the axis of the eye in a backward direction; on the other hand, causing a stoppage of the reflux of blood from the eye, in consequence of the inclined position of the head, and an overfilling of the pupil with blood, which also heightens the pressure in the background of the eye. Both circumstances together are the cause of shortsightedness.

This argument is, on the whole, undoubtedly correct, although it is possible that objections may be urged against single points. Donders (On the Anomalies of Accommodation and Refraction of the Eye, London, 1864, p. 343,) does not accept the elongation of the pupil as a result of the accommodational activity, although he explains the frequency of shortsightedness among the educated classes expressly by the straining of the eye with too close objects. Three causes are determinative with him: first, the pressure of the external muscles of the eye upon the pupil, with strong convergence of the axis of sight; second, the heightened pressure of the fluids, in consequence of the massing of blood in

the eye, by the inclined posture of the head: third, congestive positions in the background of the eye. The worse the light the stronger these causes appear, for the nearer must the object be brought to the eye, and from this results the stronger convergence, as well as the increase of the pressure of blood.

It is evident that this latter explanation applies just as well in the case before us as in the one previously mentioned. If it is to be accepted as proved, that shortsightedness (myopia) is in reality an elongation of the axis of the eye, and that the greater proximity of the object to be observed, together with the bowed-over position of the head, and especially with imperfect light, can produce, by and by, such an elongation, we must all the more ascribe a similar effect to the unsuitable forms of the desks and benches since their immovability compels the scholar to bring his eye closer to the object under observation, and does not leave him the choice of bringing the object nearer to the eye. At best, he is only allowed in reading a certain freedom in this respect; in writing, reckoning, and drawing this is not possible.—*(To be continued.)*

WOMAN'S WORK AS TEACHER, AND HER PREPARATION FOR IT.

IN these times, when our ablest and most thoughtful men are interested in the 'woman question,' when large space of our most respectable journals is daily and weekly given to the respectful discussion of female suffrage, I trust it will not be thought inappropriate for me, before a convention of teachers, a majority of whom are young women, to address myself especially to them. And I do so with less hesitancy, because I know it to be a frequent practice with speakers of the other sex to address their remarks solely to the 'brethren,' to give entire lectures, even courses of lectures, to young men, without the slightest compunction of conscience, and as if there were really nobody else in the

world. Sometimes, indeed, we feminines come into notice in a manner not the most flattering to our self-love.

> 'Oh, why did God,
> Creator wise, that peopled highest heaven
> With spirits *masculine*, create at last
> This novelty on earth, this fair defect
> Of nature?'

sings Milton:—'More than a thousand women is *one man* worthy to see the light of the sun,' says Euripides flatly. Dr. Todd, in our time, finds it worth his while to devote a whole book to telling his lady friends that they are capable of nothing but marriage and maternity. The *Nation*, that prince of journals, cannot help speaking contemptuously of the 'inner light,' which 'women trust to, and which the rest of the world knows nothing of.'

And finally, school committees, with the weight of the education of the 'coming man' and coming woman upon their hands, will give a lady teacher only one-half, one-third, one-fourth, one-fifth as much salary as a gentleman, to take charge of their district school, and fear that they have made a poor bargain at that. It is the same old story; flattery, a world of pretty compliments, any amount of sublime twaddle about 'angelic beings,' lightly overlying just such sneers as I have mentioned.

'The praise of men is not a test of our praiseworthiness,' says Whately, 'nor is their censure; but either should set us upon testing ourselves.'

I have been interested in this matter of teacher's wages; I have been surprised to know that in Vermont the salaries of women range from $8 per month (with board?) to $750 per year, while those of men range from $20 per month to $1,600 per year.

Looking for the cause of this disproportion, I have gone from the wages to the work of women, and I confess to finding more cause for surprise and dissatisfaction here.

They tell us that the profession is crowded, but (I quote from the *Independent*) 'every school committee man knows that while there is a flood of applications to teach primary schools, the competition rapidly diminishes as the grade ascends; while to obtain a good high-school teacher who

can take classes in Latin and French is exceedingly hard. As to Greek, it is not to be thought of.' And he goes on: 'It is very rare to find American-bred girls who are good linguists, either as to ancient or modern tongues. Of those who seek places as teachers the French accent is usually very bad, while the knowledge of Latin is of the most shallow and superficial kind. French must therefore be taught by a foreigner, and Latin by a man.'

One would think that inasmuch as teaching is an ancient and honorable profession—almost the only honorable profession of long standing for women, that some—more than an occasional one of the bright girls who are the pride of examination days at our academies, would have an ambition to stand high in it.

'There is room at the top,' you know Webster said of his profession; and it is true of this, not only that there is room there, but that there is need there, and no inequality in the matter of wages or esteem.

But our *Independent* writer evidently did not know all about the schools of Vermont. I think there are committeemen here who will tell you that it is not always easy to find *primary* teachers of the right sort.

People are beginning to wake up to the fact that very young children need very good teachers. Mothers, knowing by experience that if there is a mistake in the yeast, the bread will not be good—that there is more importance in the cutting of a garment than in its making up, look into the earnest eyes of their little ones, listen with hushed spirit to their wonderful questionings, pray God for wisdom to guide those first outreachings of an immortal soul, and shrink from putting them in the care of a bungler, or even under a thoughtless, half-educated girl, to receive their first bias in mental culture.

And there is a lack of women to do *first-class work*—I do not speak unadvisedly—in schools of *all grades* in Vermont.

What becomes of the bright girls of our academies and high schools? Teachers tell us that these girls, while in the school, excelled their brothers in many, if not in all departments, that they stood highest in composition, history and mathematics. Some one adds, 'But they stop sooner; they reach maturity earlier than boys.' Why did he add that?

Is it a proper sign that a boy or girl has reached maturity because he or she has left school? Do those girls who have lingered there past twenty, show signs of having reached the limit of their capacity? 'They stop sooner.' The question is, Why do they stop so soon? There are the boys, their classmates, plodding on in college. After graduation, perhaps, they will work for a profession. They will all be married too, in due time, and does any one think they will make poorer husbands and fathers for not having frittered away that four or seven years?

Meantime the girls have been staying at home, corresponding with their sweethearts in college, making pretty dresses, and—teaching school. Very well, it is a good thing for girls to stay at home, *if there is any thing to do there.* I like girls to make themselves pretty dresses and pretty rigs of all sorts, if they do not give their main time and thoughts to it. I like girls to teach school, if they do give their main time and thoughts to it.

I hope I may not be misunderstood; I would not take away one particle of the bright romance of girlhood; I consider it a charmed period; I would not lay the burden of a finger on its sparkling joys, and I would not have the girls themselves to deaden and flatten life by leaving out of it its realities. Mrs. Browning says:

> 'Get leave to work in this world, 'tis the best you get at all,
> For God in cursing gives us better gifts than men in benediction.'

So when a girl, having acquitted herself well in the high school, is about to leave it, I would have her pause and ask herself what there is for her *to do?*—'the work good in itself that is good for her—the best she was born for.' If by the light of reason and conscience she decide that that work is teaching, let her consider the nature of her calling, and the preparation needful for it.

And here I cannot help wondering if every one who is now in the teacher's chair, as well as every unsuccessful applicant for such a position, has considered the matter carefully, and decided as in the presence of the Most High, that that is the work he or she is called unto. Are there none in school-houses solely on account of the miserable stipend

they receive?—none who are teaching to pass away the time, or for convenience, or because there seemed to be nothing else to do? How can there be so many failures if every one is doing one's best, and in the best manner?

As to the preparation needful for teaching:—we remember what we have read and heard all our lives about the importance of a teacher's work; we call up, as best we may, the facts of a teacher's position, and draw an inference therefrom that makes us tremble. And then comes a difficulty—a real mountain in the path. Where are the colleges and higher seminaries of learning for us? With a boy the only question is, What college shall I favor with my patronage? With a girl it is, What college is there to receive me? Our highest schools are only equal to their preparatory schools. Mt. Holyoke hardly goes beyond Phillips Academy. There is Vassar College; I wish the halls of that institution might be so crowded, and so many turned away from its doors for want of room, that some of our philanthropic, moneyed men, might see that it would be for their interest in a double sense, to found another and really meritorious Female College within the limits of the United States. I would like to see women so awake to their deficiencies and needs, that they would apply to themselves a proper proportion of the fine things that are saying in these times about culture and reform. I think it would not be long before some woman of God-given wealth, some mother in Israel, or some blessed maiden aunt, would make a will in favor of the girls; or better, a benefaction to be appropriated in her life to the endowment of a university that should be some approach to a Yale or a Harvard, for the young women of her own and future generations.

Meantime we need not be idle. Let us do thorough work in our preparatory schools, read, study and think, act in the light of conscience and the fear of God, do nothing shabbily or by halves. I wonder if the young teachers who come to these conventions year after year, know how much need there is of the advice so often reiterated: 'Prepare yourselves; do your work *well*.' Does any one know how many there are actually in school as teachers, who can read intelligibly; I mean who can take an ordinary book of poems

or of history, and sit down of an evening, and read so *distinctly* and so well, as to entertain a half dozen of friends without effort on the friends' part to be entertained?

Does any one know how many there are, who can not only recite the rules of grammar, but who speak English with tolerable correctness; whose verbs and nouns generally agree; who do not make adjectives do the work of adverbs, and adverbs the work of adjectives; who have thoughts on the important matters of life, and know how to express them clearly and intelligibly in conversation; how many there are who spell correctly, write a fair hand and punctuate properly?

Surely these things can be learned without going to college; but it takes work and time, and pains, more than we think.

What we want of the girls, then, is better preparation, more earnestness, more hard work; or rather, more thorough, more systematic, *better* work. It is not so hard to study principles as to kill time; perhaps it is a little harder to think; but, to use a common vulgarism, it pays better—oh, vastly better; for when you have succeeded in killing time, you have at best his ghost upon your hands, and it will haunt you on your death-bed if not before.

We want you to become better educated, to make more for yourselves, and more of life, not to get higher positions necessarily, but to fill *well* those you have. Time is too precious to be wasted; God's work is too sacred to be shabbily performed.

Hear what the good and great men of our time are saying to your brothers on these subjects; they would say them to you if they thought you were interested. Be interested; do not spend all your life among sticks and straws, when there is a golden crown not far from every one of us.—*From a paper read before a Teachers' Association.*

"KEPATOMEATATERIN."—This was the note sent by a farmer to the school teacher in the potato-digging season, to explain his boy's absence from school.

HOW OIL-CLOTH CARPETS ARE MADE.

THE cloth employed is burlap, a fabric made mostly in Dundee, Scotland, from jute fibre. It comes in bolts of one or two hundred yards, from forty inches to six feet in width. The first thing to be done is to cut the cloth into pieces twenty-five yards long, the length of a piece of carpeting when finished. A sizing of glue is then applied, and after allowing a sufficient time to dry, the cloth is again rolled up, about twelve pieces to each roll, and allowed to lie until ready for the application of the paint.

Before any of the figures are laid upon the cloth, it receives several coats of a uniform color, generally of a reddish brown, as a groundwork. The paint is composed of linseed oil and ochre. It is applied drawing the cloth through a machine consisting of rollers and scraping edges, which spread the paint evenly and rapidly over the cloth, one man standing by the machine and dipping on paint with a great ladle from a large tub standing near by. The room where this is done is nearly filled by several tiers of racks reaching from the floor to the top of the room, and twenty-five yards in length. Across the room, at the end of the racks, runs a track upon which the paint machine glides back and forth, so that it may be placed at pleasure opposite each tier. Each piece of cloth, as it passes through the paint machine, is drawn upon one of the racks, and there lies twenty-four hours to dry, when it is ready to receive a second coat on the other side. Standard goods receive six coats of paint, three on each side, but a cheap article must be contented with four.

After the second coat of paint is dry the cloth is taken to an adjoining room, and scoured by blocks of pumice stone moved by machinery, and assisted by broad knives in the hands of the workmen, to remove all roughness. This is repeated after the fourth coat.

Forty-eight hours after the last coat of paint is applied, the cloth is in condition for printing. To see this operation, we go to an upper room, where we find a number of large revolving tables on which are pads smeared with the several

colors wanted; over each pad hangs a pot of appropriate paint, and a brush wherewith to apply it to the pad. By each table stand two workmen; before them is a stationary table across which lies the cloth they are painting, and beyond this is a tier of racks for the painted goods to dry on, just as in the paint-room below. The painting is done from wooden blocks of the proper pattern, and generally eighteen inches square, so that if the piece of cloth is two yards wide one block covers one-quarter of its width. Each block prints only one color, so that there must be as many blocks as there are colors. The workman turns the revolving table, seizes a block from the freshly painted pad upon which it is lying, lays it carefully upon the cloth, presses it close by thumping it with an iron maul, and returns it to the pad; while you see that a portion of the pattern, a single color, has been added to the groundwork. As soon as he is done with one color, he pushes the table until it brings the next block within reach. In this way he uses block after block until all the colors have been applied and the figure on that portion of the carpet now before him is complete. The cloth is then drawn forward eighteen inches, and another section of it receives the same treatment. If the cloth is wide, two men work side by side, each printing half the width. The body of the paint used in printing the figures is composed of the best oil and white lead. The blocks and the pads have to be carefully cleansed with naptha at the close of every day's work.

After the printing, the fabric lies upon the rack two weeks, at the end of which time it is dry enough to be rolled up and carried to the baking-house. In this house is a lattice-work floor, through which there is an easy circulation of air. The rolls of carpeting are stood on end partially unrolled to admit air to all parts of them. The temperature of this house is, when the carpeting is first brought in, at 75 or 80 degrees Fahrenheit, but during the three weeks that the rolls stand here, it is raised to 90 degrees. This hardens the fabric sufficiently for the next operation, which is varnishing.

The varnishing is done very much like the painting, by drawing the carpeting rapidly through a machine where the varnish is put upon the surface, distributes it evenly, and

without waste. This machine is the invention of the members of the firm. The old way was by hand, one man pouring on the varnish, and others spreading it with large, long-handled brushes, looking like floor brushes. In summer time this was done upon the ground in open air, and not unfrequently the sticky surface did a lively business in catching grasshoppers, and whatever the wind chanced to blow that way.

After the varnish is dry, the edges of the cloth are pared straight, the number of the design with which it is printed is affixed to the back of the roll, and it is ready for market.

SOMETHING ABOUT FACES.

DOGS alone supply the outlines of half the faces we know. There is the bull-dog—that man in the brown suit yonder, with bandy legs and heavy shoulders—did you ever see kenneled muzzle more thoroughly the bull-dog than this? The small eyes closed under the brows, the smooth bullet forehead, the heavy jaw and snub nose, all are essentially bull-dog.

Then the mastiff, with the double bass voice, and the square-hanging jaw; and the shabby-looking turnspit, with his ear out at all sides, and his eye drawn up to its roots; and the greyhound, lean of rib and sharp of face; and the terrier—who is often a lawyer—with a snarl in his voice and a kind of restlessness in his eye, as if mentally worrying a rat—his client; and tyke, all beard and moustache and glossy curls, with a plaintive expression of countenance and an exceedingly meek demeanor; and the noble old Newfoundland dog, perhaps a brave old soldier from active service, who is chivalrous to women and gentle to children; and who repels petty annoyances with a grand patience that is veritably heroic.

Reader, if you know a Newfoundland dog-man, cherish him; stupid as he probably will be, he is worth your love. Then we have horse-faced men; and men with camel lips:

and the sheep-faced man, with his forehead retreating from his long, energetic nose—smooth men, without whiskers, and with shining hair cut close, and not curling, like pointers; the lion man—he is a grand fellow; and the bull-headed man; the flat serpent head; and the tiger's, like an inverted pyramid; and the giraffe's lengthy unhelpfulness; and the sharp red face of the fox. Don't we meet men like these now-a-days every step we take? and if we know any such intimately, don't we invariably find that their characters correspond somewhat with their persons?

I know a woman who might have been the ancestress of all the rabbits in all the hatches in England. A soft, downy-looking, fair, placid woman, with long hair looping down like ears, and an innocent face of mingled timidity and surprise. She is a sweet-tempered thing, always eating or sleeping, who breathes hard when she goes up-stairs, and who has as few brains in real working order as a human being can get on with. She is just a human rabbit, and nothing more; and she looks like one. We all know the setter-woman—the best of all types—graceful, animated, well-formed, intelligent, with large eyes and heavy hair, who walks with a firm tread, not a light one, and who can turn her hand to anything. The true setter-woman is always married; she is the real woman of the world.

Then there is the Blenheim spaniel, who covers up her face in her ringlets, and holds down her head whenever she talks, and who is shy and timid. And there is the grey-hound-woman, with lantern jaws and braided hair and large knuckles, rather distorted. There is the cat-woman, too; elegant, stealthy, clever, caressing, who walks without noise, and is great in the way of endearment. No limbs are so supple as hers, no backbone so wonderfully pliant, no voice so sweet, no manner so endearing. She extracts your secrets from you before you know you have spoken; and half an hour's conversation with that graceful, purring woman has revealed to her every most dangerous fact it has been your life's study to hide. The cat-woman is a most dangerous animal. She has claws hidden in that velvet paw, and she can draw blood when she unsheathes them.

There is the cow-faced woman, generally of phlegmatic

temperament and melancholy disposition, given to pious books and teetotalism. And there is the lurcher woman, the strong-visaged, strong-minded female, who wears rough coats, with men's pockets and large, bone buttons, and whose bonnet flings a spiteful defiance at both beauty and fashion. This is that wonderful creature who electrifies foreigners by climbing their mountains in a mongrel kind of attire, in which men's trousers form the most striking feature; and who goes about the business of life in a rough, gruff, lurcher-like fashion, as if grace and beauty were the two cardinal sins of womanhood, and she were on a "mission" to put them down. This is not a desirable animal.

We have women like Merino sheep; they wear their hair over their eyes and far on to their necks. And women like poodle-dogs, with frizzy heads and round eyes; women like kangaroos, with short arms and a clumsy kind of a hop when they walk; and we have active, intelligent little women, with just the faintest suspicion of a rat's face as they look after the servants and inspect the mysteries of the jam closet. Then there are pretty, little marmoset faces. I know the very transcript of that golden-haired Silky Tamarin in the Zoological Gardens. It is a gentle, plaintive, loving creature, with large, liquid, brown eyes, that have always a tear between them, and a look of soft reproach in them; its hair hangs in profusion of golden-brown curls—not curls so much as a mass of waving tresses; it is a creeping, nestling, clinging thing, that seems as if it wants always to bury itself in some one's arms—as if the world outside were all too large and cold for it.

There is the horse-faced woman, too, as well as the horse-faced man; and there is the turnspit woman, with her ragged head and blunt, common nose. In fact, there are female varieties of all the male types we have mentioned, excepting, perhaps, the lion woman. I have never seen a true lion-headed woman, except in that black Egyptian figure, sitting with her hands on her two knees, and grinning grimly on the Museum world, as Bubastis, the lion-headed goddess of the Nile.—*English Paper.*

GEOGRAPHICAL NOTES.

UNITED STATES.—A correspondent of the *Western Home Journal* (Lawrence, Kansas, Sept. 19,) with the United States Geological Survey, gives a description of the Yellowstone Falls, which is, perhaps, worth reproducing for some of the particulars. The approach was from above:

"Above, the deep, green water, as it approaches through the gorgeously colored wall, is whitened by the glistening of the waves; then, as it proposes to make the grand descent, the colors deepen into the richest possible shades of green and brown, over which play and dance thousands of lines of skipping light. Just on the brink all is suddenly changed into a clear, glassy green, of wonderful purity and beauty; this color is gradually softened and blended into a lilac tint of the softest and most delicate hue that can be conceived. Over these colors as a ground-work, the rich, creamy foam descends in graceful folds and festoons, blending together in a most enchanting harmony the whole sheet of falling water. About midway in its descent, the fall plunges into a cloud of ascending spray, and is lost; while from the great depth of the cañon comes a deep, steady roar as of distant thunder. Fully six hundred feet below where we stand, a very thin, wiry stream of water emerges from the mist, and hurries away, whirling and foaming down the winding gorge below."

Another party of the Survey descended Snake River to the Tetons—a range of mountains in Idaho, just on the border of Wyoming, and having an Alpine character. The same correspondent writes (date of Aug. 17):

"The highest peak in the Tetons range has been climbed by Mr. Stevenson and Gov. Longford. Dr. Hayden told us that one might as well undertake to climb a 5,000 foot liberty pole, as to try to climb Teton peak. The last 300 feet were gained by cutting holes for their feet with knives and hatchets, and at one time Mr. Stevenson had to cling to a boulder with his arms, while he drilled with his boots a foot-hole in the ice and snow—a letting go of his hold would have plunged him down over a precipice of 1,000 feet. This peak is thirteen thousand two hundred feet above the sea, and to-day in a meeting held by the entire survey, we have christened it Mount Hayden, in honor of the Doctor, who has been engaged in the survey of the Territories for the last fifteen years."

A correspondent of N. Y. *Herald* with Mr. Stevenson tells of the exploration of an extinct volcano on the way to the Tetons. The crater is about half a mile long by a quarter

of a mile wide, "and, with its rocky sides broken by the wear of time, it presents the appearance of a ruined amphitheatre." At the foot of this mountain was a jagged rock mass, which the explorers named "Kenilworth Castle." In visiting it on the descent, they were surprised to find the sides of the fancied "banqueting hall" covered with Indian sketches, cut into the soft sandstone. "There were buffaloes, elk, horses, deer, warriors, all drawn with an accuracy that left no doubt of the originals. The whole was connected by a series of hieroglyphics, illustrating some historical event."

——On the 17th of September the interesting Dutch colony of Holland, Ottawa Co., Michigan, celebrated its twenty-fifth anniversary. It owed its foundation to the persecutions visited upon the Reformed Church in Holland thirty-five years since, which in 1847 provoked an emigration quite similar to the more famous one two centuries and a half ago. Dominie Van Raalte was the leader of this one, and still lives to preside over the welfare of the colony. There are five Dutch and one English newspapers printed in Holland. The town was three-fourths destroyed by the great forest fires of October, 1871, but has nevertheless continued to prosper. In the beginning the colony was reinforced by Hollanders from St. Louis and Albany; but it soon began to draw on the old country, and still grows by direct immigration thence. The number of these Dutch settlers in Ottawa, Kent, and Allegan Counties, is estimated at 25,000. Any American desirous of learning to speak Dutch, has only to visit these people, and make his stay long enough.

EUROPE.—In the old French province of Provence is the Department of Basses-Alpes, and of its arrondissements of Barcelonette and of Castellane here is a pleasant picture drawn by M. Claudio Jannet:

"Primary instruction is wide-spread, thanks to the long winter leisure. The stranger who traverses these valleys, observes with surprise that all the inhabitants, without exception, speak French correctly, and know how to read, write, cipher, and spell *(mettre l'orthographe)*. Nor in this are the women behind the men. It is said that a young girl who cannot read and write actually finds it hard to get

married. Children owe their education to domestic teaching even more than to the schools. In the night watches there is reading and conversation in these families of mountaineers. The readings, taken from the Bible and from the Lives of the Saints, inspire the hearts of the young with the principles of morality, which are the basis of education, and at the same time they promote instruction. No legal constraint could obtain results approaching those which are produced in this region by public sentiment and the right organization of the family.

"Families are very fruitful, but their fecundity does not prove burdensome, inasmuch as emigration from these parts is regular and normal. Every year the excess of population emigrates—not only to Marseilles and Paris, but even to Mexico. The valley of Barcelonette especially has a very important colony in Mexico, and each village is in constant communication with its own emigrants. The new comers are welcomed by their predecessors, who take them in as clerks, and afterward leave their business to them when they return to their native land. In fact, these emigrants never lose the desire to return. When they can, they go back to establish themselves among their mountains, and employ their savings, often considerable, in purchasing an estate.

"In the highest valleys, where agriculture is impossible during six months of the year, the heads of families leave home at the beginning of winter to ply their trade of peddler, either at Lyons, or in the towns of Flanders. Every village, from time immemorial, has sent its men out in this manner into one or other of these districts. They all start together, and also return together toward Easter. Both their going out and their coming back are accompanied by solemn prayers. The money they pick up in these excursions varies from 500 to 2,000 francs, and ensures them a little ease for the rest of the year."

——It is a pity that Greece and Massachusetts are not neighboring States. Their populations are almost exactly the same in point of number—differing only by some hundreds, in fact—that of Greece being 1,457,894; and Greece has a surplus of 50,458 men against a corresponding surplus of women in Massachusetts. The union of these surpluses would be eminently gratifying to those social philosophers and statisticians who are grieved by the present disparity. Nor is such a union an altogether fanciful idea. There is much in the modern Greek to remind one of the Yankee character, and he is, it is well to remember, not a lineal descendant of the Greek of Marathon and Chæronea. Slavic names abound in the peninsula. In Acarnania a lake is called *ozéro*, as in Russian. Parnassus and Helicon now

have the barbaric name of Zagora, the word *gora* meaning mountain in Russian. Lake Copaïs, in Bœotia, is called Topolias, after a Russian word *topoli*, meaning poplar. Other instances in plenty might be given. Fallmerayer, who wrote a "History of the Morea in the Middle Ages," contended that the modern Greeks were a mixture of Slavs, Albanians, Wallachians, Jews, Turks, Italians, and Bohemians.

AFRICA.—Letters from Dr. Livingstone, dated July 2, 1872, have been received at Zanzibar. He was still at Unyanyembe in good health, and was awaiting the arrival of Mr. Stanley's second American relief expedition. *Pace* Mr. Stanley, it is proper to put on record the dissent of the British geographers from Livingstone's conclusions concerning his late discoveries, in so far as he connects them with the Nile. At the meeting of the Royal Geographical Society which Stanley attended, Dr. Charles Beke said it was by no means pleasant for him to have to recant the opinions which he had so long maintained, but he was perfectly convinced that Livingstone had not discovered the sources of the Nile. Capt. Speke made Tanganyika 1,700 ft., Baker made the Albert Nyanza 2,700 ft., or, as it has been corrected, 2,500 ft. Even making an allowance of 200 ft. or 300 ft., it seemed impossible, on account of the levels, that the river Lualaba should flow into either of those lakes. He concluded that the Lualaba must either go into the Ulle, or into some lake, or turn round to the Congo. He did not, however, think it went to the Congo, owing to the ascertained levels. The *Academy* of Sept. 1 says:

"The Lualaba could not join the Albert Lake, as it lies upwards of 500 feet above the given elevation of the river, not to mention the very mountainous country of Ulegga, spoken of by Speke, Baker, and Livingstone, which intervenes to prevent it. Dr. Schweinfurth's explorations, carried on contemporaneously with those of Livingstone in Manyema, by tracing the rivers forming the Bahr-el-Ghazal to their sources, have shut off the only inlet which seemed possible to Dr. Livingstone himself. The conclusion is evident that Livingstone, though searching for six years with this object in view, has never once seen the Upper Nile at any point. It has been suggested that a great inland lake may receive the waters of the Lualaba, but such a continental system in the equatorial forest region of Africa, saturated

by double rainy seasons, is a physical impossibility. Any lake in this belt must overflow. The only outlet on the west coast, capable of discharging such a volume of water as that accumulated by the Chambeze-Lualaba and its lakes, is the Congo; and the second conclusion forced upon us is that it is the Upper Congo river which the great traveler has now made known.

"The results of Dr. Schweinfurth's latest remarkable journey in Dar-Fertit in the beginning of 1871 are fully described in the current part of *Petermann's Mittheilungen.* In former journeys Dr. Schweinfurth had explored and mapped out the source country of the Rohl, Tonj, and Jur tributaries of the Nile rising westward of Gondokoro. These rivers flowing northward unite in the Bahr-el-Ghazal, which joins the Nile above the ninth parallel of north latitude, and have hitherto been considered as the chief streams of this lateral system. In his last journey, however, the traveler, by going westward, has crossed the upper streams of a river named the Abu Dinga, which he identifies clearly with the Bahr-el-Arab, a tributary of the Ghazal formerly considered to be of small importance, but now proved to be the longest and largest branch of the Bahr-el-Ghazal system.—Ernest Marno, a traveler in Upper Sennaar, has sent to Gotha a full report of his journeys in this region during 1870–'71, and a most valuable map, which it is said will add greatly to our knowledge of the territory of the Abyssinian Nile."

——A new caravan route from Wadai (in Soudan) to Egypt has been opened, independent of that from Darfur to Siout. It reaches the Nile two or three hours' distance below the pyramids. This is a new source of wealth for Egypt and of misfortune for the victims of slavery.

——The population of Madagascar has never been accurately determined. Ellis, in his history of the island, reckoned it at 4,450,000. Consul Pakenham placed it at 5,000,000, among them 5,000 Christians; Barbié du Bocage, at only 3,000.000. Alfred Grandidier, the gold medallist for 1872 of the Paris Geographical Society on account of his explorations in Madagascar, is inclined, from careful observation and inquiry, to allow a population of something more than 4,000,000. The "Christians" alone now amount to not less than 3,000,000—an over-night conversion by the queen's command. The coast natives are daily diminishing. The north-eastern half of the island, and the most beautiful and productive, is held by the Hovas, a race apparently of Malay extraction. Their women are extraordinarily fruitful.

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——Dr. G. Neumayer's essay on the exploration of the South Pole, in No. 38 of the *Journal* of the Berlin Geographical Society, has been published in a separate form. It is a full résumé, extending over fifty pages, of the literature of the subject, illustrated with a very good map, and gives the details of a scheme which he laid before the Geographical Congress at Antwerp for prosecuting a further exploration of that region. He proposes that it should be combined with an expedition to observe the transit of Venus, and, starting from the Cape of Good Hope, and making the M'Donald Group head-quarters, should endeavor to push on from Kemp's Land toward the pole. At the close of the pamphlet is a full list of works and maps relating to the subject.—*Academy, Sept.* 1.

——News from Captain Burton states that he is pushing forward over the vast snow ranges in the unexplored portions of Iceland, and in the course of a few weeks it is expected that he will have examined the chief geographical features of this region, which it is said has never before been visited by man. Communication will be maintained via Copenhagen and Lerwick (Shetland Islands) by the Danish Government steamer *Diana*, so that the exploration—the result of which is looked forward to with great interest by the Icelanders as well as by men of science in this country and elsewhere—may be prosecuted as long as the weather is favorable. Meanwhile it may be well for any one to whom this famous island is still little known, to procure and read Prof. C. W. Paijkull's "Summer in Iceland" (Philadelphia: J. B. Lippincott & Co., 1868) It is a remarkably full and entertaining description of that peculiar country, in speaking of whose customs, it has been said, a foreigner must employ a great many negatives:

"He will observe first, if you please, that 'there are no snakes there;' and then that the houses have no chimneys, and no fireplaces for warmth; no ovens, no floors, no ventilation, no light, and no cleanliness; no security against damp and vermin; that the farmers have no agricultural implements, and nobody any carts; that the graveyards have no tombstones; that there are, with one exception, no public schools, and no poor-houses, and no executioner; no woods, in the common acceptation of the term, and consequently no timber for building or fuel; no thunder in the summer time; no prejudice against homœopathy, but the contrary; no male tailors. Bread is baked in an iron pot, and is not a constant article in an Icelander's diet. If he be poor, he will eat dried fish smeared with butter instead. Meals are taken sitting on beds in place of chairs. The horses refuse oats. Turf and dung, and even fish-bones and seaweed, are used for fuel. Children are taught at home, and examined there and at church by the minister; there are no illiterate Icelanders,

and few who are not proficient in history and geography. There are also few who do not drink brandy with considerable frequency, at sixpence the quart; importation of which increased nearly eighty per cent. from 1849 to 1862. Add the universal habit of snuff-taking; the common need, but not use, of insect powder; and a more than German practice of kissing among the men, and you have a people with whom a protracted stay, or even a brief entertainment, would seem intolerable."

——Dr. Schweinfurth, the renowned German explorer in Central Africa, is about to return with the object of continuing his explorations, chiefly in the interests of botany. His brother, a merchant at Riga, has come forward with a handsome sum of money, the interest of which will be given to aid Dr. Schweinfurth in his undertaking, and will afterwards be handed to the Polytechnic School of Riga, to found a prize to defray the traveling expenses of future explorers who may have studied there with success.—*Nature, Sept.* 5.

——Sir Walter Elliot read a paper before the British Association in August, on some of the earliest weapons in use among the older inhabitants of India, in which he observed that Prof. Huxley, in classifying the varieties of the human race, exclusively for physical characters, had included under one head the people of New South Wales, of the Highlands of Central India, and of Ancient Egypt, all of whom he includes under the term Australoid. Now it is a remarkable coincidence that among these three far-distant peoples the "throw-stick" was the weapon of the chase, and that examples do not occur in the intermediate countries. The pictures in the tombs of the kings at Thebes represent hunting scenes, in which the curved sticks found at this day in India are extensively represented. The boomerang of Australia is precisely of the same form, but, being thinner and lighter, is so fitted to have a recoiling property.—*Nature, Sept.* 5.

——Sir G. Young read a paper before the same association on Asiatic emigration to the West Indies. He stated that the Indian population of British Guiana had been recently estimated at 7,000. The negro population in 1861 was 93,000, and although it showed in ten years an increase of only 9,000, or under one per cent. per annum, yet there were signs of a future larger increase; and the author believed it would be allowed that the establishment of the negro race here, as elsewhere on the American continent, was a permanent fact in modern geography. The negroes in British Guiana were, however, of little service to the planters, and it was a matter of great moment to know whether the new Asiatic immigration would hold its own in the colony. Since 1843 there had arrived 153,797 Eastern laborers in the various colonies of the West Indies, of which number British Guiana had received 89,264. The annual immigration for the last five

years has been 7,862, with no signs of falling off. Although a return passage is allowed after ten years' residence, only 15,000 out of 137,000 had claimed it. The average number who leave British Guiana annually has been, for the past five years, only 312. The author believed that the Chinese coolie would die out, and the East Indian continue to multiply in the West Indies; but whether the latter, who was too feeble to fell and cultivate the virgin forest, would hold his own against the negro, depended on the chance of a reform in negro habits, which at present tended to relapse into barbarism. [As to which last, and the causes of it, one should read "The Coolie," by the author of "Ginx's Baby." New York: Geo. Routledge & Sons, 1871.] —*Athenæum, Aug.* 31.

Cartography.—An atlas of France, in four volumes, quarto size, containing ninety-five maps with ninety-four geographical and statistical notices, by Adolphe Joanne, may now be had (second edition, revised) for forty francs, of L. Hachette, Paris.

——The active exploration by the Russians, during the last few years, of the geography of the region of Mongolia lying next to their Siberian possessions, and the establishment of new relations, political and commercial, with these countries, would lead us to suppose that the annexation of these lands to the great empire is seriously contemplated. A very important map of this region accompanies the last part of *Petermann's Mittheilungen.* It is based on Klaproth's map of Central Asia, which was drawn from the surveys made by the Jesuit missionaries of Pekin by order of the Emperor Khian-loung, and upon that of M. Veniukov which accompanied the seventh number of the *Isvestija* of the Russian Geographical Society for 1871; but the map is filled in and greatly amended from the journeys of the Russian travelers Schishmaref (1864-'65), Palinof, and Matusovski (1870), containing besides a reconstruction of the routes of Prinz (1863) and the artist Atkinson, so far as they bear upon this part of Asia. These tracks cross Mongolia in sufficiently various directions to form a trustworthy basis on which the detailed topography of this inner Asiatic plateau may now be accurately laid down.—*Academy, Sept.* 1.

PUNCTUATION is a wonderful thing. A man telegraphed to Burlington for a school, "Shall I come, or is the place filled?" The answer properly was, "No. Place filled on the 17th." The telegraph operator received it, "No place filled on the 17th." He went for it and was minus traveling expenses.

A SCHOOL POST-OFFICE.

THE idea of having a post-office in school may be a novel one to many. My attention was first directed to this subject by reading a description of a school post-office; I resolved to establish one in my own school, upon an entirely different plan. This resolution I carried into effect. Its results may be of interest to my fellow-teachers. In the first place I purchased a lozenge box, cut a hole in the cover large enough to slip a letter through, and nailed it up in my school-room. I then made out a list of regulations, something like the following:—

1. Mail distributed each morning.

2. Each letter written by one scholar to another, must contain a question pertaining to some subject presented in some text-book used in the school.

3. The scholar receiving the letter, must answer it and the question it contains, within one week from the time received, and also state in his letter the number of mistakes found in the letter received.

4. Letters must contain no matter not pertaining to the school.

5. If scholars receive letters which they cannot answer, they may write and ask the teacher to assist them.

6. All written exercises given out in the classes must be directed to "The Teacher," and put in the office.

7. The postmaster will inform the school secretary of the number of letters distributed each morning, who will make a record of it in the school journal.

8. The teacher will claim the privilege of inspecting the letters at any time before distributing.

9. Each morning the postmaster will collect the letters distributed the day before, and pass them to the teacher, who will correct and return them the next day.

10. The school secretary will make a record of the letters free from errors, and also state by whom written.

11. Letters must be neatly written, and properly directed.

12. The teacher would be pleased to correspond with any scholars upon any subject pertaining to their lessons or to the school.

These regulations I read to the school, explained the object of the post-office, advised each scholar to purchase a small blank book, and keep a record of the questions asked and answered, appointed a postmaster and a school secretary, and explained to them their duties.

The result of my experiment was a great interest on the part of parents and pupils, a full mail every morning, a neatly kept school journal, and a decided improvement in the language, spelling, punctuation, and writing of the children. They also acquired a vast amount of general knowledge; the writing of which fixed it firmly in their minds. There were twenty-five scholars attending school, but eight of whom could write. During a term of twelve weeks, eight hundred letters passed through the office. Most of these letters were written out of school hours. The largest mail distributed at any one time was seventy-four letters. The questions asked were all sensible, and most of them original.

I frequently wrote letters to the scholars, explaining the import of the different papers used in business, and requesting them to write various kinds. The result was that I had at the end of the term a large package of notes, bills, receipts, invitations, orders, advertisements, business cards, etc., to show to the committee and friends attending the examination. The children thus gained a great deal of *practical* knowledge, and the parents were permitted to see specimens of their children's industry.

I have received the eulogiums of parents on the plan given above, and know that it has added to the interest of my school. I think it would be more interesting in a large school. It would then, I think, be better to have the mail distributed but once a week. Any exercise which calls for a frequent use of pen or pencil, is of benefit to children, and if the exercise can be made to *seem play*, all the better,—that is, if the same results are produced. I would advise all teachers who desire to increase their own reputation and to improve their scholars, to try this plan and to mark its results. Teachers who are afraid of work, or distrust their own ability, should not try it; for it requires considerable time, and also a large stock of information in regard to the branches taught.—*Eliza H. Morton, in Mass. Teacher.*

AN ENGLISH SCHOOL SQUABBLE.

CONSIDERABLE interest is being manifested in a case at Stalybridge, England, in which a question as to the powers of the School Board of that town, has been raised by one Jonathan Schofield, a mill operative to that place. When the notice was served on him requiring him to send his daughter, aged seven years, to school, he sent a letter to the Board stating that she stayed at home to look after domestic matters, and that he was qualified to teach her when he came home in the evening. The letter concluded with the following passage: "I would ask if the affairs of my family are in matters of this kind no longer to be regarded by me, but by you? If the edicts of the School Board, etc., are to supersede parental authority, then why did God make me into the father and guardian of five fine healthy children?" A reply was sent by the clerk to the effect that there did not appear from the letter to be any reasonable excuse within the meaning of the elementary educational act, and advising Schofield to attend personally before the Board.

Schofield sent a long letter in answer to this, in which he stated: "I claim a full right to say what my children shall be taught, and who shall teach them, as I do to say what they shall eat and what they shall drink. It may be true that some acts of Parliament give you the power you wish to exercise, but there is a law, older than any act of Parliament, which makes every father responsible as the teacher and guide of his own offspring, and this law no human authority has any right to abrogate." He then complains that a minister and also a member of the Board are not compelled to send their children to school, and concludes as follows: "Is there really one law for the rich and another for the poor? I have only to add, knowing in what manner my last letter was received (with laughter), I feel I should be wanting in self-respect were I to attend your meeting, and therefore decline doing so." A summons was issued against Schofield, but we are not informed of the result of the inquiry before the magistrates.

DISCIPLINE AGAIN.

IN all large institutions, German, English, and American, a Janitor is employed. It is the custom, in some countries, to vary the monotony of this good man's round of sweeping and dusting by transforming him into a self-working, back-action whipping-post, the Principal acting as castigator. The fact is, but little if any difference can be found in the inner working of large schools, wherever found! In all educational institutions, the Principal's most important duty is overseeing Assistants and pupils. This is a very delicate task, for too often is he called on to decide on troubles arising, on the one hand from a lamentable ignorance of the nhuma mind, and from the hasty impulses of youth on the other. He is the temporary father of the flock, vested with parental rights. Now, doesn't it strike you that it would be rather an absurdity for the Trustees of the town of Alameda to furnish out a "thoroughly qualified man," whose duty would be to place himself in a public position, placarded after this fashion: "PUBLIC WHIPPER! Patent, well padded, and easily adjusted screws, bands, belts, and straps! Flogging neatly and promptly performed, suited to the nature of the offense. No pains spared to give entire satisfaction." I might carry out the picture by painting the assortment of tools:—A goose feather for the boy whose greatest sorrow would be an apparent exile from a first place in his parent's heart; a leather strap for the impulsive romp; cowhides, pickets, or a gate post, for those who have "been there" before. But I should be wasting space. Let me ask, would this official be very extensively patronized? Hardly. Parents rightly feel that whatever is done in the line of correction, should be regarded as a sacred duty, to be sacredly done. Even so with the teacher—his own experience in boyhood, his knowledge of the offender and the offense, his educated temperament—all point him out as the correct judge and the only proper executor. One principle is all-important: There must be a connection between the offense and the penalty. If you say to an offending scholar, "When —— comes around, you'll get a thrashing for that,"

what actual difference is there between the resultant rain of blows in such a case, and the back blow or kick with which a boy resents a real or fancied injury? None. Both are instances of revenge. The first is sugar-coated with authority, and gilded by the name of "punishment;" the second, riding a smaller horse, is a quarrelsome young ruffian, who must be punished, *for not remembering that punishment is revenge!*

Now, I may endanger what little reputation I have as a schoolmaster, but I distinctly lay down the rule that punishment ought to be banished, not only out of schools but out of the world. Observe, I don't say *can*, but *ought*. My reason is this: God made this universe on geometric principles. It is a fundamental axiom of geometry that "like produces like." Every blow laid on the person of a child is a step whence springs up an evil passion. As an instance of the direct connection between offense and penalty above referred to, I will cite our mental and physical natures. Evil communications leave their baleful impress on our minds; contact with edged tools or heated substances leaves an unwelcome memento on our bodies.

I *did* once hear a teacher assert that these were the forms of revenge that Nature took for transgressions of law; but, as there was no tribunal handy for trying murderers of poetical imagery, the benighted being escaped unhanged. If you put your fingers in a flame, eat unripe fruit, unconsciously drink from a poisoned spring, or dam the course of a rushing stream, you set yourself in opposition to the condition of things established at that memorable period when the fiat went forth—"Let there be light." Here is cause and effect. You handle a knife and you are cut; you meet with flame and you are burned; you drink of poisoned water and you are convulsed; you stop a river and you are drowned; pull my bell rope and you have an alarm. These are natural effects, springing from natural causes. Effect follows cause as light follows the sun.

The nearer you can get to this reciprocal system of discipline in school and political life, the nearer you approach the millennial period. I suppose I am asked what is my parallel? So far as my own experience goes, I think I can

answer. I would select a school governor strong in possession of what many call *magnetic influence*, but which I regard as Will Power. Having this quality, he will be enabled, if properly aided by parents, to erect in the minds of his charges a common standard of right. Arriving at this stage, the simplest method of computation may be made available. Put the whole record of the scholar on paper; make it stare him in the face—an ever-visible reminder—and, with an intelligent and conscientious parentage, your purpose will be effected.

I contend that the system of checking used in all of the large schools in the United States and Germany, rightly carried out, is the nearest approach to a "natural method" of discipline and instruction. Of course, it requires some degree of skill to make this efficient; but, with all the ingenuity of the teacher, a credit in an unappreciable, fault-finding home circle is about as valuable as copper coins were to Robinson Crusoe in his solitary sojourn on the island of Juan Fernandez. The idea of punishment, as at present understood, need have no part with such a record. Why? Each mark acts as an exponent of the pupil's proficiency or standing. A child transgressing school rules deprives himself of the enjoyment of a clean record. In this case, the teacher gives no punishment—he is simply tolling the knell of a still-born pleasure. I have found these checks a very powerful auxiliary in my peculiar system of discipline. Never having struck a blow in the course of some six years' teaching, I have had recourse to personal influence in the creation of an emulative spirit. With pupils under my own eye, this course has been invariably successful, when uninterrupted by parental thoughtlessness. With smaller children—those but seldom within reach of my own personal influence—I have been sometimes compelled to use force to compel obedience, although, even in such cases, I have endeavored to measure quantity and quality with such nicety as to drown resistance, without throwing into the case any feature that would be taken by an impartial observer for revengeful assault. I have had strong, manly, noble boys (and all honor to them!) proudly dash away a tear as their perfection melted before the ardor of their own

impulses; and I have had high-spirited and intelligent girls, just budding into womanhood, bitterly bewailing the suicide of a credit as if their hearts would break. I tell you, sir, the energy and ambition born of this experience will strengthen their vitality and "make a man" of your boy, and, for that matter, of your girl too.

Let your teachers alone! They make discipline and instruction a study—I fondly imagine, a science! Your boy or girl that you "can't do anything with" is only one of over a hundred raw recruits in the Army of Progress. With many undisciplined at home, too often uncared for, order and obedience are their hardest lessons. There can be only one master in this assembly—the teacher or the taught. You lawyers, doctors, printers, carpenters, and milliners would make a great outcry were some patron to insist on showing you how you were to do his work. Pinch us on the arm—you'll find us flesh and blood; lay your hand on our heart—it beats like yours; handle us, originally of clay—it isn't of the class called putty; talk to us—you'll arrive at the conclusion that we have the same conscience, the same desires, the same ambitions, as yourselves. Some of these days I am going to paint a nondescript animal that shall embody the popular notion of a patient and forbearing instructor. Thus far I have only gathered the skin of the rhinoceros and the heart of a mosquito. Until then, allow us more charity and less criticism; more judgment and less prejudice; more support and less opposition, and you will be rewarded by more happiness and contentment in the little hearts about your family table.

One word in relation to the female question, and I have done: To reassert the position taken by me before the State Convention of last year, I regard male teachers as out of place in the Primary Department; but I have found that, in our higher Departments, the stronger will and greater vitality of the masculine were very strong points in his favor. I am not the one to sneer at female excellence in any capacity. I have visited schools principaled by ladies, and have envied their world of tact; but, to hold that they are, as a class, the superior of the male as instructors, is an advance in the Woman's Rights movement not war-

ranted by fact, and which I should be very unwilling to indorse.

One thing must not be lost sight of: Children are not sent to school solely to have their noses poked into an atlas or a speller. The great mission of the school room is to form habits of study and self-discipline—to hew the rough block of humanity into the diviner image of an intellectual God-head. To effect this, I would honestly prefer the stronger nature of the male, after a certain point is reached. —*W. W. Stone.*

WHAT KNOWLEDGE IS OF MOST WORTH?

X.—Uses of Science.

RECOGNISING the true position of æsthetics, and holding that while the cultivation of them should form a part of education from its commencement, such cultivation should be subsidiary; we have now to inquire what knowledge is of most use to this end—what knowledge best fits for this remaining sphere of activity. To this question the answer is still the same as heretofore. Unexpected as the assertion may be, it is nevertheless true, that the highest Art of every kind is based upon Science—that without Science there can be neither perfect production nor full appreciation. Science, in that limited technical acceptation current in society, may not have been possessed by many artists of high repute; but acute observers as they have been, they have always possessed a stock of those empirical generalizations which constitute science in its lowest phase; and they have habitually fallen far below perfection, partly because their generalizations were comparatively few and inaccurate. That science necessarily underlies the fine arts, becomes manifest, *à priori*, when we remember that art-products are all more or less representative of objective or subjective phenomena; that they can be true only in proportion as they conform to the laws of these phenomena; and that before they can thus conform the artist must know what these laws are. That this *à priori* conclusion tallies with experience we shall soon see.

Youths preparing for the practice of sculpture, have to acquaint themselves with the bones and muscles of the human frame in their distribution, attachments, and movements. This is a portion of science; and it has been found needful to impart it for the prevention of those many errors which sculptors who do not possess it commit. For the prevention of other mistakes, a knowledge of mechanical principles is requisite; and such knowledge not being usually possessed, grave mechanical mistakes are frequently made. Take an instance. For the stability of a figure it is needful that the perpendicular from the centre of gravity—"the line of direction," as it is called—should fall within the base of support; and hence it happens, that when a man assumes the attitude known as "standing at ease," in which one leg is straightened and the other relaxed, the line of direction falls within the foot of the straightened leg. But sculptors unfamiliar with the theory of equilibrium, not uncommonly so represent this attitude, that the line of direction falls midway between the feet. Ignorance of the laws of momentum leads to analogous errors: as witness the admired Discobolus, which, as it is posed, must inevitably fall forward the moment the quoit is delivered.

In painting, the necessity for scientific knowledge, empirical if not rational, is still more conspicuous. In what consists the grotesqueness of Chinese pictures, unless in their utter disregard of the laws of appearances—in their absurd linear perspective, and their want of aerial perspective? In what are the drawings of a child so faulty, if not in a similar absence of truth—an absence arising, in great part, from ignorance of the way in which the aspects of things vary with the conditions? Do but remember the books and lectures by which students are instructed; or consider the criticisms of Ruskin; or look at the doings of the Pre-Raffaelites; and you will see that progress in painting implies increasing knowledge of how effects in Nature are produced. The most diligent observation, if not aided by science, fails to preserve from error. Every painter will indorse the assertion that unless it is known what appearances must exist under given circumstances, they often will not be perceived; and to know what appearances must

exist, is, in so far, to understand the science of appearances. From want of science Mr. J. Lewis, careful painter as he is, casts the shadows of a lattice-window in sharply-defined lines upon an opposite wall; which he would not have done, had he been familiar with the phenomena of penumbræ. From want of science, Mr. Rosetti, catching sight of a peculiar iridescence displayed by certain hairy surfaces under particular lights (an iridescence caused by the diffraction of light in passing the hairs), commits the error of showing this iridescence on surfaces and in positions where it could not occur.

To say that music, too, has need of scientific aid will seem still more surprising. Yet it is demonstrable that music is but an idealization of the natural language of emotion; and that consequently, music must be good or bad according as it conforms to the laws of this natural language. The various inflections of voice which accompany feelings of different kinds and intensities, have been shown to be the germs out of which music is developed. It has been further shown, that these inflections and cadences are not accidental or arbitrary; but that they are determined by certain general principles of vital action; and that their expressiveness depends on this. Whence it follows that musical phrases and the melodies built of them, can be effective only when they are in harmony with these general principles. It is difficult here properly to illustrate this position. But perhaps it will suffice to instance the swarms of worthless ballads that infest drawing-rooms, as compositions which science would forbid. They sin against science by setting to music ideas that are not emotional enough to prompt musical expression; and they also sin against science by using musical phrases that have no natural relation to the ideas expressed: even where these are emotional. They are bad because they are untrue. And to say they are untrue, is to say they are unscientific.

Even in poetry the same thing holds. Like music, poetry has its root in those natural modes of expression which accompany deep feeling. Its rhythm, its strong and numerous metaphors, its hyperboles, its violent inversions, are simply exaggerations of the traits of excited speech. To be

good, therefore, poetry must pay respect to those laws of nervous action which excited speech obeys. In intensifying and combining the traits of excited speech, it must have due regard to proportion—must not use its appliances without restriction; but, where the ideas are least emotional, must use the forms of poetical expression sparingly; must use them more freely as the emotion rises; and must carry them all to their greatest extent only where the emotion reaches a climax. The entire contravention of these principles results in bombast or doggerel. The insufficient respect for them is seen in didactic poetry. And it is because they are rarely fully obeyed, that we have so much poetry that is inartistic.

Not only is it that the artist, of whatever kind, cannot produce a truthful work without he understands the laws of the phenomena he represents; but it is that he must also understand how the minds of spectators or listeners will be affected by the several peculiarities of his work—a question in psychology. What impression any given art-product generates, manifestly depends upon the mental natures of those to whom it is presented; and as all mental natures have certain general principles in common, there must result certain corresponding general principles on which alone art-products can be successfully framed. These general principles cannot be fully understood and applied, unless the artist sees how they follow from the laws of mind. To ask whether the composition of a picture is good, is really to ask how the perceptions and feelings of observers will be affected by it. To ask whether a drama is well constructed, is to ask whether its situations are so arranged as duly to consult the power of attention of an audience, and duly to avoid over-taxing any one class of feelings. Equally in arranging the leading divisions of a poem or fiction, and in combining the words of a single sentence, the goodness of the effect depends upon the skill with which the mental energies and susceptibilities of the reader are economized. Every artist, in the course of his education and after-life, accumulates a stock of maxims by which his practice is regulated. Trace such maxims to their roots, and you find they inevitably lead you down to psychological principles.

And only when the artist rationally understands these psychological principles and their various corollaries, can he work in harmony with them.

We do not for a moment believe that science will make an artist. While we contend that the leading laws both of objective and subjective phenomena must be understood by him, we by no means contend that knowledge of such laws will serve in place of natural perception. Not only the poet, but also the artist of every type, is born, not made. What we assert is, that innate faculty alone will not suffice; but must have the aid of organized knowledge. Intuition will do much, but it will not do all. Only when Genius is married to Science can the highest results be produced.

As we have above asserted, Science is necessary not only for the most successful production, but also for the full appreciation of the fine arts. In what consists the greater ability of a man than of a child to perceive the beauties of a picture; unless it is in his more extended knowledge of those truths in nature or life which the picture renders? How happens the cultivated gentleman to enjoy a fine poem so much more than a boor does; if it is not because his wider acquaintance with objects and actions enables him to see in the poem much that the boor cannot see? And if, as is here so obvious, there must be some familiarity with the things represented, before the representation can be appreciated; then the representation can be completely appreciated, only in proportion as the things represented are completely understood. The fact is, that every additional truth which a work of art expresses, gives an additional pleasure to the percipient mind—a pleasure that is missed by those ignorant of this truth. The more realities an artist indicates in any given amount of work, the more faculties does he appeal to; the more numerous associated ideas does he suggest; the more gratification does he afford. But to receive this gratification the spectator, listener, or reader, must know the realities which the artist has indicated; and to know these realities is to know so much science.

And now let us not overlook the further great fact, that not only does science underlie sculpture, painting, music, poetry, but that science is itself poetic. The current opin-

ion that science and poetry are opposed is a delusion. It is doubtless true that as states of consciousness, cognition and emotion tend to exclude each other. And it is doubtless also true that an extreme activity of the reflective powers tends to deaden the feelings; while an extreme activity of the feelings tends to deaden the reflective powers: in which sense, indeed, all orders of activity are antagonistic to each other. But it is not true that the facts of science are unpoetical; or that the cultivation of science is necessarily unfriendly to the exercise of imagination or the love of the beautiful. On the contrary, science opens up realms of poetry where to the unscientific all is a blank. Those engaged in scientific researches constantly show us that they realize not less vividly, but more vividly, than others, the poetry of their subjects. Whoever will dip into Hugh Miller's works on geology, or read Mr. Lewes's "Seaside Studies," will perceive that science excites poetry rather than extinguishes it. And whoever will contemplate the life of Goethe will see that the poet and the man of science can coëxist in equal activity. Is it not, indeed, an absurd and almost a sacrilegious belief that the more a man studies Nature the less he reveres it? Think you that a drop of water, which to the vulgar eye is but a drop of water, loses anything in the eye of the physicist who knows that its elements are held together by a force which, if suddenly liberated, would produce a flash of lightning? Think you that what is carelessly looked upon by the uninitiated as a mere snow-flake, does not suggest higher associations to one who has seen through a microscope the wondrously varied and elegant forms of snow-crystals? Think you that the rounded rock marked with parallel scratches calls up as much poetry in an ignorant mind as in the mind of a geologist, who knows that over this rock a glacier slid a million years ago? The truth is, that those who never entered upon scientific pursuits know not a tithe of the poetry by which they are surrounded. Whoever has not in his youth collected plants and insects, knows not half the halo of interest which lanes and hedge-rows can assume. Whoever has not sought for fossils, has little idea of the poetical associations that surround the places where imbedded treasures were found.

Whoever at the seaside has not had a microscope and aquarium, has yet to learn what the highest pleasures of the seaside are. Sad, indeed, is it to see how many occupy themselves with trivialities, and are indifferent to the grandest phenomena—care not to understand the architecture of the Heavens, but are deeply interested in some contemptible controversy about the intrigues of Mary Queen of Scots!—are learnedly critical over a Greek ode, and pass by without a glance that grand epic written by the finger of God upon the strata of the Earth!

We find, then, that even for this remaining division of human activities, scientific culture is the proper preparation. We find that æsthetics in general are necessarily based upon scientific principles; and can be pursued with complete success only through an acquaintance with these principles. We find that for the criticism and due appreciation of works of art, a knowledge of the constitution of things, or in other words, a knowledge of science, is requisite. And we not only find that science is the handmaid to all forms of art and poetry, but that, rightly regarded, science is itself poetic.—*Herbert Spencer.*

THE WORD "US."

AN Athenian once said to a Hebrew lad, "Here, my boy, is some money; bring *us* some figs and grapes." The boy went and purchased the fruit, and giving half of it to the stranger, kept the other half for himself. "Is it customary here, for a messenger to take half of what he fetches?" said the Athenian, rather surprised. "No," answered the boy; "but our custom is to speak what we mean, and to do as we are desired." "But," rejoined the stranger, "I did not desire thee to take half the fruit." "Oh!" replied the boy shrewdly, "what else couldst thou mean by saying *bring* Us? Does not that word include the *Hearer* as well as the *Speaker?*" The Athenian smiled, and was contented. —*Medrash Echoh.*

OBJECT-TEACHING.

THE game of memory, as practiced by the Ojibways and Northern Indians, has been found profitable in schools, both for recreation and improvement, as a branch of object-teaching. The Indian chief or teacher, in his rude way, has from twenty to fifty or more sticks, cut, made sharp or pointed at the larger end, and split at the top an inch or two. These sticks are then planted around in a circle, a short distance from each other; then various specimens of different substances (a single specimen on each stick at the top) are distributed around the circle in order; beginning on the right hand of the teacher, and proceeding around in the order of numbers, one, two, three, etc. The Indians, or class, are then allowed to go around the circle slowly and take a strict and scrutinizing look at each specimen in the order of the numbers, one, two, three, and thus around the circle. This is done silently. The sticks, or specimens, are then removed and placed by the teacher, and then the class, on going around the second time, each one in order, is to tell the teacher, as far as possible, without mistake, what specimen is contained in stick number one, two, three, four, five, and so around the whole circle, if possible.

With the Indians, the first specimen will probably be berch bark to make canoes, the second a little tobacco, the third the fur of a beaver, the fourth a bit of calico, the fifth a feather of a particular bird, the sixth the bone of some sort of fish, and so on, different substances in the different sticks planted around the circle. The one who can repeat without mistake up to the highest number receives the premium of reward. The consequence is, the perceptive faculties are called into exercise, and each individual will soon learn to discriminate so sharply that they will be able to track a wolf over dry leaves in the forest as well as the white man can track the same animal in the snow. You will ask, how can they do it? I reply that they do it very readily by observation and sharp inspection, by first noticing a leaf with holes in it, the middle hole, or holes, a trifle larger and in advance of the other hole, or holes, near the central holes.

These two holes they know, by observation, were made by the toe of the wolf, and they immediately stick down a leaf by the first leaf thus marked, and search for a second, and third, and fourth, and so on, putting a stick at each leaf thus marked. By these sticks in a row they find the course the wolf was traveling, and follow on till they find where the animal drank at a spring, perhaps, and they soon discover his den among the rocks or caves near by. By this mode of sharp inspection they become acquainted with the habits of all the wild animals, and also gain a knowledge of the different plants and trees, and turn their knowledge to good account for their individual welfare. The writer has known a scholar, by practicing this exercise, who was enabled to memorize a long lesson for a Bible class, and at the recitation, without the book, repeat it backwards as well as forward, or give any particular verse called for; and he trusts that it may be made available in our common schools as a recreative and popular branch of object-teaching.—*Exchange.*

THE VERB "TO BREAK."

"I BEGIN to understand your language better," said my French friend, Mr. Arcourt, to me; "but your verbs trouble me still, you mix them so with your prepositions. "I am sorry you find them troublesome," was all I could say. "I saw our friend Mrs. James just now," continued he. "She says she intends to break *down* housekeeping. Am I right there?" "Break *up* housekeeping, she must have said." "O, yes, I remember. Break *up* housekeeping." "Why does she do that?" I asked. "Because her health is so broken into." "Broken *down*, you should say." "Broken *down*, O, yes. And indeed since the smallpox has broken up in your city—" "Broken *out*." "She thinks she will leave it for a few weeks." "Indeed! And will she close her house?" "No; she is afraid it will be broken—broken— How do I say that?" "Broken *into*." "Certainly; it is what I meant to say." "Is her son to be married soon?" "No; that engagement is broken—

broken—" "Broken *off*." "Ah!" I had not heard that. She is very sorry about it. Her son only broke the news down to her last week. Am I right? I am so anxious to speak the English well." "He merely *broke* the news; no preposition this time." "It is hard to understand. That young man, her son, is a fine fellow; a breaker, I think." "A *broker*, and a very fine fellow. Good day." "So much," thought I, "for the verb 'to break.'"

PROFESSOR MULLER ON CIRCLES.

PROFESSOR MULLER, in a course of lectures in Berlin, offered a simple and mechanical explanation of the universal admiration bestowed on circles. The eye is moved in its socket by six muscles, of which four are respectively employed to raise, depress, turn to the right, and to the left. The other two have an action contrary to one another, and roll the eye on its axis, or from the outside downward, and inside upward. When, therefore, an object is presented for inspection, the first act is that of circumvision, or going round the boundary lines, so as to bring consecutively every individual portion of the circumference upon the most delicate and sensitive portion of the retina. Now, if figures bounded by straight lines be presented for inspection, it is obvious that but two of these muscles can be called into action; and it is equally evident that in curves of a circle or eclipse all must alternately be brought into action. The effect then is, that if two only be employed, as in rectilinear figures, those two have an undue share of labor; and by repeating the experiment frequently, as we do in childhood, the notion of tedium is instilled, a distaste for straight lines is gradually formed, and we are led to prefer those curves which supply a more general and equable share of work to the muscles.

THE schoolmaster who, more than forty years ago, gave instruction to the present primate of the Church of England, Tate, and the Roman Catholic archbishop, Manning, is still living.

CURRENT PUBLICATIONS.

WE suppose there is no man of generous literary culture, and no seeker after such culture, who would not set great store by a thorough knowledge of the Greek tongue, even if time had preserved to us nothing else from that magnificent literature which it has embodied, than the Dialogues of Plato. It were pay enough for much weary work—it would even be an education in itself, to grasp all the subtle thoughts and follow all the intricate questionings of this prince of philosophers. But few, even among Greek scholars, so far as we are aware, read the original of Plato with ease and instant apprehension of his meaning. That wonderful style of his—neither prose nor poetry, yet the adequate and consummate expression of his loftiest thought and delicatest distinctions—is to us barbarians a sort of obstacle sometimes, darkening the thought that to the cultivated Athenian must for the most part have been as clear as the day; as clear, perhaps we ought rather to say, as the nature of the thought would permit it to be. The greater part of those moderns who have had occasion to investigate the Platonic doctrines at first hand, have yet, we imagine, called Schleiermacher, or Cousin, or Taylor, or some other translator to their aid. The version most often handled of late, is that in Bohn's Classical Library. This was the work of three different hands, and gives proof in the various volumes of their different degrees of skill. Some of the dialogues are rendered fairly well and may be read with some satisfaction: but in not a few it is plain that Plato has been "traduced" by one who, whatever his knowledge of Greek, certainly lacked the English for his difficult task. Not seldom the version becomes intelligible only upon reading the original from which it has been "overset."

In Prof. Jowett's translations, (1) however, we see at once the hand of a master of English style. We might be pretty sure that the Regius Professor of Greek at Oxford would

(1) THE DIALOGUES OF PLATO translated into English, with Analyses and Introductions. By B. Jowett, M.A., Master of Balliol College, Regius Professor of Greek in the University of Oxford. four volumes. New York: Scribner, Armstrong & Co.

not often miss the meaning of his original where the text is not hopelessly corrupt; but a thorough knowledge of a foreign tongue is only half of the translator's equipment. An easy, flexile, yet sinewy English will alone suffice as a vehicle of the subtle, wide-reaching, profound thoughts of the all-questioning Greek. The greatest copiousness of synonyms and the subtlest discrimination in the use of them will be required in every dialogue. All possible resources of rhythm and arrangement will be found to fall short of the music and the art of Plato's periods. The supreme difficulty will be, not to understand Plato's language, but to render him fully intelligible to others under the limitations of Saxon speech. This difficulty we believe Prof. Jowett to have most successfully surmounted. In his version the dialogues are certainly most delightful reading. The conversation runs on and on, as smoothly for the most part as if it were an original composition. The Apology, the Phædo, or the Republic can be thoroughly enjoyed in the present version. The same is true of the last named, Plato's greatest work, in the admirable rendering of Davies and Vaughan; but a comparison of the two shows that Jowett is not seldom the more vivacious and forcible.

A very valuable feature of this edition of Plato is the extended introductions prefixed to the separate dialogues. These go over the whole ground of the discussion, and are meant to supersede all necessity of special notes. They indicate the relation of each dialogue to the rest so far as discernible; and set forth the method and underlying idea of the Platonic system, if the name system may be given to such tentative speculations. It is the distinguishing excellence of these preliminary essays, that, instead of estimating Plato's theories and principles in the light of modern science and philosophy, they illustrate them from the prevalent thinking of his own and preceding times. In other words, it is Prof. Jowett's endeavor to take us back to Plato's day and surroundings, rather than bring the Attic thinker down into the midst of our scientific and practical nineteenth century. A moment's thought will show this to be the only proper way of procedure. The opposite course would be as unjust as unhistoric. For ourselves, we choose to study

Plato under Jowett's tutorship rather than Grote's; for we believe that the former occupies the truer point of view.

It only remains to be said of these volumes, that they are well printed on tinted paper, and can be had for just one-half the cost of the English edition.

THE numerous classical teachers of New England, who received their college "fit" at the hands of "Uncle Sam," will know exactly what to look for in the new edition of Kuehner's Grammar. (2) They know beforehand that it is accurate, practical and entirely sufficient for the preparatory course. In addition to the revision which the work has undergone, we note with approval the fact that the exercises have been set by themselves at the end of the syntax and a catalogue of Principal Verbs added. Valuable as the modern classification of Greek irregular verbs may be, we should hesitate a long while before adopting an elementary grammar which should lack an alphabetical list of them. This want, as we have said, is here supplied.

A NEW Chemistry (3) commends itself by the way in which it unites the practical with the scientific. It conducts the student to the principles and laws of Chemistry by the true path of observation and experiment. We like specially the series of 228 Experiments detailed in connection with the several elements, the careful directions in the appendix for Chemical Manipulation, and the Order-lists of Chemicals and Utensils. The private student may go at work with no other aid than the manual gives him, furnish his laboratory at a trifling cost, and work out for himself the main facts and laws of inorganic chemistry. This little work is something more than an abridgment of the larger, as it gives, under the head of Carbon, some seventy pages upon organic compounds. We trust the time may soon come when the pupils in our high schools and academies may learn chemistry, instead of learning *about* it. Such a book as this will set them on the right track.

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(2) AN ELEMENTARY GRAMMAR of the Greek Language, with Exercises and Vocabularies. By Samuel H. Taylor, LL. D. New York: Ivison, Blakeman, Taylor & Co.

(3) AN ELEMENTARY MANUAL of Chemistry, abridged from Eliot and Storer's Manual, by William Ripley Nichols. New York: Ivison, Blakeman, Taylor & Co.

THE New York *Evening Mail* says:—"A. S. Barnes & Co. publish a collection made by Charles Northend, A. M., of "pieces" in prose and poetry, designed for the use of pupils in intermediate schools. There are a few good selections, many 'goody' ones, and an abundance of trash. The pupil must be very 'intermediate' indeed who could stomach such weak water gruel, and the teacher very incompetent who could offer no better food for growing minds from the resources of English literature."

MISCELLANEA.

THE *New York Herald's* Washington correspondent, in discussing Japanese matters, says:—"On account of these complications Mr. Birdseye G. Northrop, the Connecticut State Commissioner of Education, declines the similar position tendered him some time ago by the Japanese government."

THE N. Y. *Evening Post* says: "Mr. Mori denies having officially engaged Mr. Northrop to found a system of education in Japan."

Doubtless Mr. Northrop can explain.

MR. O. H. KILE, Principal of the public schools in Westerly, has been invited to accept the Principalship of the Kansas State Normal School at Leavenworth. Salary, $2,500.

IT is announced that Professor Blyden, who is an accomplished Arabic scholar, and an African at that, has discovered a well-appointed Mohammedan university in the interior of Africa, about eighty miles from Freetown, in which one thousand persons of both sexes are receiving an education. The Arabic Bible, published in this country, is used as a text-book, and a number of dusky women are diligently studying the Arabic language.

FOUR of the Japanese students at Williston Seminary board with Landlord Hill. Each wished a separate room,

but were told he should have to put two in a room, unless one was sick. The boys are bright, and soon took their cue, and Mr. Hill received the following note, which is verbatim et literatim, et punctuatim :—

DEAR MR. HILL: Mr. Seye has a sick, & he cannot lay down to-gether Mr. Ouseke in the same bed, therefore he want a other bed. May he get it?

SQUIRE—"Hobson, they tell me you've taken your boy away from the National School. What's that for?" Villager—"'Cause the master ain't fit to teach un!" Squire—"Oh, I've heard he's a very good master." Villager—"Well, all I knows is, he wanted to teach my boy to spell 'taters' with a 'P'!"—*Punch.*

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